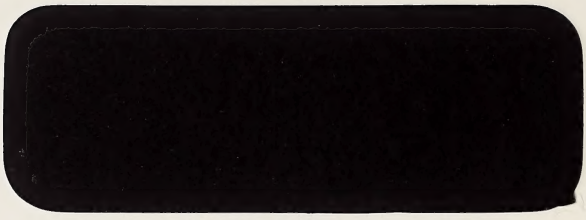
AL. 2. 1986 - 198
#3

CANADIANA
AUG 9 1978

SELECTED PAPERS FROM THE SOCIAL INDICATORS CONFERENCE

1975

DDN
184 2948



SELECTED PAPERS FROM THE

SOCIAL INDICATORS CONFERENCE

1975

Selected papers from the Social Indicators Conference, Edmonton, Canada, 29-31 May, 1975 organized by the Population Research Laboratory (Department of Sociology, University of Alberta) and the Alberta Bureau of Statistics and sponsored by the Canada Council.

May, 1977

The views expressed in these papers do not necessarily represent those of the Alberta Bureau of Statistics, the Population Research Laboratory or the Canada Council.

FOREWORD

This volume contains selected papers from the Social Indicators Conference held in Edmonton in 1975. A previous volume, Proceedings of the Social Indicators Conference 1975, published in March 1977, comprised edited discussion sessions from the Conference.

The primary objective of this Conference was to provide a forum for the discussion of issues surrounding the conceptualization and development of social indicators. Conference participants comprised a diverse group of administrators and researchers from the academic, government and private sectors in Canada and the United States.

Papers for this edition were selected to represent the variety of approaches to the social indicator enterprise apparent during the Conference. A complete list of submitted papers, some of which have in the interim been published elsewhere, appears at the conclusion of this volume. Interested readers are advised to contact the respective authors for further information.

Organization of the Conference was undertaken by David Brusegard of the Alberta Bureau of Statistics and P. Krishnan of the Sociology Department, University of Alberta. The process of reviewing papers for this volume was facilitated through the kind assistance of P. Krishnan and Les Kennedy of the Sociology Department.

Lynn Hewitt and David Brusegard
Proceedings Editors

Bureau of Statistics
Alberta Treasury
480 Terrace Building
Edmonton, Alberta

TABLE OF CONTENTS

Problems in the Development of a Social Indicators System for Canada 3
Betty Macleod

Social Policy, Social Indicators 15
C. A. Hooker

Indicators and Public Policy: The Validation Problem 25
Judith I. deNeufville

Problems in the Development of Social Indicators 43
N.T. Jazairi

Changing Educational Patterns: Their Impact on Social Indicators 51
Roger R. Woock

The Social Meaning of Labour Indicators 63
Alexander Matejko

Correlates of Self-Reported Victimization and Perceptions of Neighbourhood Safety 77
Daniel J. Koenig

Listing of Additional Conference Papers 93

Digitized by the Internet Archive
in 2016

https://archive.org/details/selectedpapersfr00soci_0

PROBLEMS IN THE DEVELOPMENT OF A SOCIAL INDICATORS SYSTEM FOR CANADA

Betty Macleod

The Ontario Institute for Studies in Education

Introduction

The development of a social indicators system by the statistical departments of federal governments has become a fashionable preoccupation in advanced countries of the world.[1]

From an awareness initially generated in reaction to explosive social, economic and political change associated with the space program in the United States,[2] concern about the disruption of social values and goals has spread widely throughout industrialized societies. Rapid technological change, pressures of population upon resources, the threat of pollution of the earth's environment, and individual perceptions that the quality of life is indeed deteriorating, have all encouraged a redirection of thinking along qualitative lines.

The steadily expanding literature about social indicators has ranged over selecting appropriate areas of concern, determining priorities, and establishing the criteria for selection of statistical series as indicators by which to measure the dimensions of, and alterations to, concern areas. Recently, and probably a direct reflection of the problems encountered in the development of systems of social indicators, attention has been directed toward difficulties

which arise in refining and extending existing statistical series, bridging information gaps, and other operational aspects of the system.[3]

To be meaningful in its ordained role, any system of social indicators must have been generated against a set of value judgements about which there is some basic agreement throughout society. Although complete consensus is never likely to have been achieved regarding either the predominating importance or the relative priorities of the issues which are delineated as foci for the information-gathering system, the goals must represent "those values, goals, and features of society that are considered important in assessing the state and direction of the society".[4]

Adequacy of the Statistical Series

Judgement of the "adequacy" of statistical indicators does not rest on their all-inclusiveness or even on the lack of bias for individual series,[5] but rather on their having touched ground with some of the important issues in our society in a manner which reflects the state and direction of societal trends. The adequacy of statistical series as indicators or surrogates for areas of concern should be considered: (1) on the basis of the characteristics of individual series; (2) in relation to the aggregate series used to reflect the area concern.

First, the series should reflect on, or correlate closely with, some aspect of a concern area and should complement the other series used to reflect the condition or direction of the concern area.

Secondly, data in the series should be defined, collected, organized and presented in a manner consistent with other data used in compendia or sets of indicators.

As a general comment, it would appear that the present arrangement of data is probably due to the administrative arrangements under which existing statistical series are collected and processed, and that those arrangements may not always be the most appropriate procedures for the task at hand. Some thought should perhaps be given to trading off the inconvenience and cost of realigning the statistical data against the improved insights which might result from juxtaposing comparable series which otherwise are widely separated in the publication format, and reformulating data series which should be comparable but are not because their orientations or methods of collection or collation are different.

In addition, the overriding logic of a system of social indicators relates primarily to the individuals or groups of individuals within society, and only secondarily to society as a whole. Data series, then, need to be in a form which can be related to individuals or groups of individuals or to some grouping of consumers of the variable studied. While they perhaps may serve as surrogates when their orientation is otherwise, social indicators are most appropriate when they can be expressed on a per capita, per family, per household, or per some social group basis, since the basic intention of a social indicators system is to measure personal and social well-being.[6]

A further question arises regarding aggregate statistical series, as opposed to considering particular series of data. This involves asking whether the aggregate series effectively reflect the selected area of concern and deciding whether perhaps some improvements can be made in quality and quantity of statistical coverage in order to indicate more adequately the state and trends in the concern area. Where extension of statistical information seems to be indicated, we will need to make note of levels of difficulty associated with this goal, i.e., whether the information desired is readily quantifiable or whether a surrogate is available from which we can derive inferences about the variable of interest. The decisions which are made will need to be based upon considerations of cost, accuracy, relevance and dependability.[7]

Some basic principles set forth in a U.N. report on Social Indicators for Housing and Urban Development[8] apply generally to selecting all types of social indicators:

(a) priority should be given to policy-oriented data required for the achievement of goals, rather than data required mainly for research purposes or for international comparison;

(b) data should be collected for designing indicators that reflect not only deficiencies or shortfalls, but also changes in the standards themselves;

(c) priority should be given to data that throw light on the condition of the underprivileged.

The representativeness of indicators respecting the concern areas and the goals implicit in the selection of those concern areas need to be constantly reviewed. Otherwise, progressive extension of data coverage for a concern area may imply goal achievement where it has not really taken place.

Consideration also needs to be given to the effects of changing value standards which may alter the goals of society or the priorities assigned to them. Monitoring changes at this level is not likely to be accomplished effectively through existing data series, since the information is not easily quantifiable. Special surveys will be required to reflect attitudes and satisfactions, and measurement of such information will need to be accomplished in terms of rating scales indicating, for instance, relative levels of satisfaction respecting the state or direction of the variable being investigated.

Other Concerns Relating to Statistical Series and Their Coverage

A paper by Albert Biderman[9] suggests guidelines regarding the selection and use of regular and continuous trend statistics as social indicators. (1) For the sake of reasonableness of cost and effort as well as to avoid an information glut, data-collecting needs to be limited to those phenomena that are important for evaluating a fairly wide range of programs and institutions. (2) The concerns considered for inclusion should be limited to those wherein trends can be anticipated with sufficient certainty to warrant establishing statistical series representing them.

(3) Since regular statistical series, by definition, will not include unique, non-comparable events, information needs to be gathered, probably on an ad hoc basis, relevant to distinct circumstances and to unique events that cannot be anticipated.

Since most of our data-collecting apparatus is geared to recording positive accomplishment or services performed, there is a gap in our knowledge about the effects upon the individual of the absence of such things. The significance of this sort of information becomes clear if we focus on one of the generally accepted goals of our society, equality of educational opportunity. A primary series employed to reflect this is level of school attainment, perhaps cross-classified by income, and the usual inference which is derived from the data is that under-privileged classes in our society are less able to attain higher levels of education than are the more privileged classes. The implication is that equality of educational opportunity can be improved by extending scholarships and other sorts of financial aid to persons in underprivileged classes who are desirous of continuing their education. What is neglected is an awareness of the host of other impediments, other than the financial one, which can cause the individual to forego educational development. The illness of parents, required baby-sitting of young children, conflict of hours with other obligations, are some of the more obvious reasons other than lack of interest or lack of ability which may account for non-participation of individuals in education. All of these circumstances suggest social policies which, if implemented, could make

for greater equality of educational opportunity for the individuals concerned.[10] Probably much more could be done to reduce inequality if negative factors were defined, so that programmes could be introduced with a view to eliminating impediments to goal attainment.

Political Exigencies

Political considerations are likely to enter the scene at a very basic level. The development of a system of social indicators is only one of many projects about which political leaders have to make decisions. Any government is likely to recognize the need for collecting statistical data, but it does not follow that collecting data relating to the social system will take priority over collecting data dealing with production and trade and other indicators of the state of the economic system.

In the preparation of any official government publication, there are likely to be constraints upon content, upon the manner in which the materials are presented, and upon the extent to which the implications of data trends can be explored. Indeed, in order to obtain support of persons in government circles, it may be necessary to accommodate particular sets of interest. Where unfavourable trends or rate differentials are indicated as likely to persist or worsen, publication of projected trends is not likely to be encouraged by government decision-makers. Only very basic series, such as population, are likely to be extrapolated and the results made public.

Financial and Administrative Exigencies

The development of a system of social indicators represents a substantial financial outlay. The exact cost dimensions will vary according to the degree of existing statistical coverage of concern areas and according to the suitability of the form in which data are organized. Not only is there a need to provide for the cost of collecting, processing and publishing new series of data relating to concern areas, but special studies are also likely to be needed. Three information areas warrant broad programmes of research in order to bridge existing gaps in the Canadian data base: (1) the reflection of attitudes towards and levels of satisfaction with the existing state and direction of trends in concern areas; (2) the projection of trends in concern areas and the study of their implications; and (3) research on the precise nature of the relations that connect different alternative variables not only with social well-being but with one another, in terms of information about hard-to-measure variables as well as easily observable and quantitatively measurable ones.

Some General Conclusions

Systems of social indicators are a mark of the affluent society. They reflect a concern for the betterment of mankind, and they have policy implications including the redistribution of income to eliminate poverty and other social vices. When a nation becomes affluent enough to consider such changes, it must be able to monitor social well-being and the effects of changes brought

about by policies oriented towards social improvement. If the nation wishes to administer its social programmes efficiently, its government must have data reflecting the success or failure of these programmes, and consequently a system of social indicators must be developed.

Government departments are the most suitable statistical agencies for developing social indicators because of the size and cost of statistical operation and because "government agencies have longevity, and the accumulation of statistical expertise, knowledge, lore, and professional tradition that goes with it".[11] But government departments may not make optimal choices regarding appropriate concern areas or regarding the data series which need to be collected, for a number of reasons. In the first place, where financial strictures do not permit both sets of data systems to be developed, the sorts of pressures brought to bear upon politicians are likely to result in a preference for economic data over social data. Moreover, because projection and analysis of implications of trends in social data may be politically embarrassing, such work may be limited under government auspices, and the findings may have limited dissemination.

At a less general level, the development of a system of social indicators at the government level is subject to the temptation to use existing data series as a cost-saving measure, whether or not the series are really adequate to the purpose at hand. Not only government departments are susceptible to such pressures. Any researcher has to make a trade-off between perfectibility and the

cost of reformulating data or using limited financial resources to extend the data base.

The need for participation in the social indicators field by individuals and agencies outside government circles is pointed up by some of the arguments set forth above. In particular, there is a need to debate the concepts and ordering of concern areas. This is especially necessary in Canada because of the strung-out nature of the country's settlement and tendency for strong local and provincial interest to develop. Where there is disagreement about the prime areas of concern, such differences need to be recognized and alternative orderings suggested. In that way, corrective actions in the social policy arena, which are the logical consequence of monitoring the state of social well-being, can be limited to areas where they are applicable.

And finally, it becomes clear that the participation of non-government researchers in the social indicators field is imperative if the implications of trends in social indicators are to be fully researched. It is surely to know where we are going, even more than to know where we are now, that social indicators are needed. If government statisticians are reluctant to explore these avenues to the full, because of possible political difficulties, then the duty of non-government researchers to take up the task becomes evident.

Footnotes

1. See Organization for Economic Co-operation and Development. The OECD Social Indicator Development Programme. List of Social Concerns Common to Most OECD Countries. Paris: OECD, 1973.

2. See Raymond A. Bauer, (Ed.). Social Indicators. Cambridge, Mass.: M.I.T. Press, 1966, pp. xiv-xv.

3. Raymond A. Bauer. Detection and Anticipation of Impact: The Nature of the Task, and Albert D. Biderman, Social Indicators and Goals. In Social Indicators, op. cit. and others.

4. Raymond A. Bauer. op.cit., p.2.

5. See the discussion of the merits of all-inclusiveness and of the significance of bias in Albert D. Biderman, op. cit., pp. 260-66.

6. The Economic Council of Canada has suggested an alternative framework. According to that view, we are involved with establishing a system of goal indicators rather than a system of social indicators, and "the goal areas include interests and concerns of both individuals and governments". Design for Decision-Making, Eighth Annual Review, Ottawa: September, 1971, p. 70.

7. See discussion in United Nations, Department of Economic and Social Affairs, Social Indicators for Housing and Urban Development, Report of the Ad Hoc Group of Experts, p. 13.

8. Op. cit.

9. Anticipatory Studies and Stand-by Research Capabilities. In Social Indicators, op. cit.

10. Improved provisions for care of the dependent elderly, more widespread day-care facilities, and greater flexibility of hours and programmes on the part of educational institutions are some of the answers suggested here. While action is, of course, being taken in all these areas, the existing programmes are designed to meet particular needs; although an unintended side effect may be the redressing of inequality of educational opportunity, the programmes were not introduced for that purpose.

11. Robert Parke and Eleanor Bernert Sheldon, Social Statistics for Public Policy. Reprint from the Proceedings of the American Statistical Association: 1973 Social Statistics Section.

SOCIAL POLICY, SOCIAL INDICATORS

C. A. Hooker

University of Western Ontario

I

We live in an increasingly complex world -- this is said with some justice. In many important respects we may not be as aware of ourselves as are many so-called primitive peoples, but we certainly have created an incredibly complex technological framework for our culture and we are becoming increasingly self-conscious of its impact upon our culture and our personal lives. Still, we are properly a primitive people ourselves in the area of interpersonal communication and decision-making. Thus it is not surprising that we should be unclear about the conceptual structure of these cultural areas. These remarks are devoted to the point that social designs realize value judgments and so the new and much-vaunted social indicators, since they too realize designs -- theoretical and practical policy designs -- are consequent upon social design evaluations rather than prior to, and a guide to, the formation of social policy. It is a simple point but a crucial one for a coherent philosophy of practical social action -- I will try to indicate its place in the larger pattern.

II

Social indicators arose out of the social failure of social policy based upon economic indicators. They are meant to

do at least one thing which economic indicators fail to do: cover those features of human life which are ignored by economic indicators. Better still, they are intended to give a measure of the quality of our lives.

Everyone understands, on reflection, that what counts as a high quality life is a matter of value judgments. For a Jain, the period of highest quality comes when life is finally relinquished in the triumph of the One over one of its differentiations; for some North Americans, a high quality life might consist in having enough beer, cigarettes and football games never to have to leave the lounge chair in front of the telly again. One might attempt to distinguish basic human needs from idiosyncratic needs and so define a value-free basic quality of life as the satisfaction of the basic needs, but the examples of the previous sentence were designed to cut across any plausible candidate for this latter list.

One might plausibly suppose that, given the understood failure of economic indicators and the avowedly evaluative character of a high quality life, it would be well understood that the use of social indicators as guides to policy involves important value judgments. And there is, in fact, a continuing, widespread debate about the matter. Despite its historical setting, however, there is still confusion over whether social statistics are social indicators, and if not, when they become so and there is still a significant group that would ally social indicators to economic statistics as normatively neutral. Perhaps even more seriously, the ways in which

the design of social indicators reflects social value judgments, the subtlety of the interplay between the two, seems not to be fully appreciated by most, in some cases even by those who recognize the normative nature of the latter. The prevailing model of the normative dimension seems to be that to a perfectly neutral ("uninterpreted") social statistic, one adds a role in policy formation and this associates to it the normative judgment that it is good (proper, appropriate) that it be used to this end. This view is vague enough that it could be adequate, but the real situation is nearer to the case where obtaining the social statistic is like asking the question, "Have you stopped sinfully beating your wife?" and policy is formed according to whether the answer "yes" dominates or not. That is, there is built into the design of the indicator itself a set of assumptions, evaluative and factual, which will also constrain the formation of policy. I offer some simple schematic examples of how this works.

Sewage treatment is an important part of maintaining a high quality environment. A plausible social indicator for environmental quality might be the per capita tertiary sewage treatment capacity available in a community. A high community investment in tertiary sewage treatment would be indicative of a high quality environment and, conversely, a low investment indicates the need for a modified social policy to raise the investment level. But the fact is that the treatment of sewage for disposal in our waterways is a poor design. We take one of our most abundant naturally occurring

sources of nutrients and at great public expense dump it into a part of the ecology that is ill-equipped to handle it. Instead we have the option of preparing it for return to that part of the ecology naturally in a position to handle it, the agricultural system, where we additionally save on the cost of fertilizer and on the consumption of resources and environmental damage attendant upon fertilizer manufacture. (Also, the million dollar research problem to find an acceptable alternative to phosphates now becomes irrelevant, since phosphates are an important plant nutrient and hence an asset in fertilizer. A perfect example of dissolving a problem by removing its presupposed conditions.) A high investment in tertiary sewage treatment is actually an index of unimaginativeness, an index of the unnecessarily used economic resources that might otherwise be used for the development of the community. The social indicator here is based upon poor systems design and shares the negative features of its design base.

Another example of the same sort is worth mentioning. A plausible social indicator in the area of community health is the per capita hospital facilities available. Yet large hospital facilities may be required because the transportation system injures people at a high rate, or because the community is permeated with unhealthy habits (e.g. smoking) or unhealthy facilities (e.g. poor sewage treatment) or because of a high incidence of violence, and so on. Again, large hospital facilities is a misleading indicator of quality of life in these contexts -- indeed, it may be a direct

indicator of low quality life. Here the social indicator is insensitive to value judgments concerning the preventive/curative functions of the medical profession.

But this example also introduces a different dimension: institutional design dependence in addition to technological design dependence. The very fact that we choose to concentrate medical services into increasingly large hospitals, for which there has been a persistent tendency in North America, constitutes the adoption of an institutional design which carries with it value judgments concerning the role of the medical profession in the community, the importance to community and family health of accessibility and flexibility of medical service, the dominant values to be realized for professionals in the design of their professional roles, the future of professional status in the culture and so on. The structure of social indicators in the area of community health and their inter-relations to policy determination will realize assumptions on all of these issues and hence make the corresponding value judgments. Consider how the institutional structure of the medical profession might vary as between the following two conceptions of its social role: (i) as a group of autonomous entrepreneurs offering skilled services to a market of individual needs (demands produced by dysfunctions in individuals) for a price; (ii) as a social institution whose function is to (help) design and maintain a healthy community. Consider further how the design of social indicators to determine quality of "health care" will vary as between these two conceptions

of the desirable social situation.

It is now relatively easy to generalize this example to other institutions. For example, the school system realizes a set of value judgments about the ends of human development, the appropriate means to realize those ends and the appropriate criteria of progress in this regard. To accept the present institution of schooling at all, to accept the present relations between teachers, other adults and school students, to accept I.Q. tests as measures of intelligence, to accept machine-developed language correction programmes, teacher accountability and so on is, in each case, to make myriad value judgments concerning the dignity and worth of persons, emotional versus intellectual needs, the nature of autonomy and community, and equally fundamental matters.

All social indicators built upon these features, or any others, necessarily share the same range of value judgments. Consider how the design of educational institutions might vary as between the following two conceptions of the educational process: (i) an information, skill-learning device designed to maximize marketable skills by the end of adolescence; (ii) the process of personal growth in emotional depth and maturity, intellectual wisdom (criticalness, perceptiveness, imaginativeness) and social relatedness through involvement with the surrounding human community. Consider again how the design of social indicators will differ under these two assumptions. The same holds true in all institutional areas.

III

Technological and institutional designs are not value-free; contrarily, they realize certain social values and exclude others. Social indicators can only be defined in terms of technological and institutional designs. They therefore are committed to the same social value judgments as are the designs themselves. They are not therefore capable of criticizing policy at a level which challenges the value judgments they presuppose. This leads to an ironic conclusion: the logico-conceptual structure of the use of social indicators as guides to policy formation is not, after all, different from the situation with purely economic indicators. Certainly there has been an improvement. The appearance of value judgments is more transparent and the range of values taken into consideration wider, but the structure of the process of policy formation has not altered: first, it is necessary to set out one's preferred society, especially including technological/institutional designs, and then, to define those social indicators that will act as effective critics of the adequacy of policy designed to realize those already chosen social designs.

IV

This suggests a further point. The theory of social indicators should be able to critically evaluate their limitations, their evaluational assumptions. To do this it is necessary to have a theory of design and its relation to evaluational assumptions. Such a theory must unite the sub-classes of technological, institutional

and indicator designs in these respects. It must be imbedded in a theory of rational collective choice if we are to obtain a coherent account of design choice, and the whole must be imbedded in a theory of rational action if we are to obtain from it an acceptable theory of policy formation and evaluation. No such critical theory of social indicators has appeared, to my knowledge; indeed, this conception of social indicator theory is not even prevalent in the field.

Among these arguing still for a value-free conception of social indicators à la economic indicators are:

Dalkey, N.D., Lewis, R. and Snyder, D. Measurement and Analysis of the Quality of Life: With Exploratory Analysis of Applications to Career and Transportation Choices. Santa Monica: RAND Corporation, RM-6228-DOT, 1970;

Cf. the article by Biderman in: Bauer, R.A. (Ed.) Social Indicators. Cambridge, Mass.: M.I.T. Press, 1966.

For some of the more far-reaching discussion of the extent of the value-dependence of social indicators, see:

Henriot, P.J. Political Questions About Social Indicators. The Western Political Quarterly, 1970, 23, 235-255;

Sheldon, E.R. and Freeman, H.E. Notes on Social Indicators: Promises and Potential. Policy Sciences, 1970, 1, 97-112;

Sheldon, E.B. and Land, K.C. Social Reporting for the 1970's: A Review and Programmatic Statement. Policy Sciences, 1972, 3, 137-152;

and especially

Stewart, G. On Looking Before Leaping. In Carter, N.A.M. (Ed.), Social Indicators. Ottawa: Queen's Printer, 1972.

I have developed the theme of the evaluative assumptions realized in institutional designs in several papers and a book:

Cultural form, social institution, physical system: remarks toward a systematic theory of environmental problems. An invited address to the Second International Banff Conference: Man and His Environment. Mohtadi E.F. (Ed.), N.Y.: Pergamon, 1976;

With R. Van Holst. Conceptual and Institutional Structure of Energy Policy Making and Its Alternatives. Report to the Royal Commission on Electric Power Policy, 1976. To be published;

With R. Van Holst. The meaning of environmental problems for public, political institutions. In Leiss, W. (Ed.), Politics and the Environment in Canada. Toronto: University of Toronto Press, 1977;

System and Value: The Systematic Structure of Socio-Environmental Problems. In preparation.

Further issues in design are taken up in my paper:

Has the scientist any future in the brave new world: Copernicus and Velikovsky. Read to the International Symposium Marking the 500th Anniversary of Nicholas Copernicus. In Steneck N.H. (Ed.) Science and Society, Ann Arbor, Michigan: University of Michigan Press, 1975.

In addition, the reader might like to consult one or more of the following because of their contribution to thinking about alternatives -- many of them in turn contain valuable bibliographies:

Nelson, R.F. Society: Today and tomorrow, or what can we make of a world like this? Paper presented to the Ontario Camping Association, March 2, 1972, mimeographed;

Stewart, G. and Starrs, C. Gone today and here tomorrow. A working paper prepared for the Committee on Government Productivity, Ontario. Queens Printer, 1972;

Thayer, F. An End to Hierarchy, An End to Competition, Organizing the Politics and Economics of Survival, N.Y.: Franklin Watts, 1973;

Theobald, R. Futures Conditional, N.Y.: Bobbs-Merrill.

INDICATORS AND PUBLIC POLICY: THE VALIDATION PROBLEM

Judith I. deNeufville

University of California, Berkeley

Although indicator validity is logically and conceptually prior to other methodological questions, it is the one which is most neglected. One can find little systematic approach to validation in the indicator literature. It is implicit that the efforts will produce indicators that mean what we want them to, but the researcher or potential user often has little idea about how to inquire about this directly. The reasons for this seeming oversight are not difficult to understand. The primary reason is that one will never reduce the determination of validity to a set of rules or run an indicator through a computer to get a validity coefficient. One can apply procedures which go part of the way but not the whole way. Some theory or a priori notions are required to structure the process. Some judgement is involved in the final step. The existence of these subjective ingredients accounts in part for the avoidance of the validation problem. Social scientists tend to be sensitive about such "unscientific" elements in their work. However, it is false to assume that natural scientists validate their measures in some pure, analytic way. The difference is that much of the a priori and judgement role appears in the guise of their professional paradigms, which tell them what objectives to have, what assumptions to make and when a measure is valid enough. In some sense it is as arbitrary as the "softer" sciences.

Secondly, validity is not an absolute quality inhering in an indicator, but one which is dependent on use and user. An indicator designer can at most determine validity within a context and for a purpose that he happens to have explored. It may also be valid or invalid elsewhere, but he is unlikely to enumerate all the possibilities. Thirdly, for fundamental philosophical reasons, validity of a measure is ultimately indeterminate. Our concepts and measures of them are interdependent or jointly dependent on some common world view. Indicator and concept merge and it is specious to discuss whether they correspond. The validity issue comes down finally to whether the understanding of the world is itself valid, which in turn is a professional and personal judgment.

An understanding of the validity issue has implications of many kinds. Those who design and produce indicators can do more to help others to validate them for their own purposes. Users can apply various strategies to test validity and confine themselves to legitimate uses of the indicators. Government statistical policy can be planned to make validation more possible. Finally, there are implications for the extent to which indicators remain valid over time or are transferable between nations.

The Validity Problem Defined

An indicator is a shorthand for a more complex reality which enables us to discuss and analyze that reality. It is a construct, a

set of procedures and rules for collecting and combining data to stand in for a concept. The indicator of the unemployed is the product of applying a counting rule to populations to identify some as unemployed. The idea it is intended to represent is perhaps the number of people who want work, or perhaps the number who need it. The counting rule is, or should be, different according to which concept is involved. The indicator may also represent a concept which has no physical analogue but is useful in our theory or thought processes -- for example, the unemployment rate is a measure of adequacy of the economy or pressure on the job market. The validity problem is whether, how well, and in what way the indicator successfully represents the concept. But how can you say whether something you observe, like an indicator, is equivalent to something you do not observe, like a concept? The problem is compounded by the fact that we only observe the phenomenon through indicators. How can we develop an independent method of validity assessment?

Validity Tests

The problem is not unique to the social sciences, but is recognized in all sciences. The answers lie in the application of theory or at least some a priori expectations. At the simplest level we can test validity by inspection of the indicator and concept and ask whether that particular construct could represent the phenomenon. A criterion for poverty of $25,000 a year income would quickly be rejected as invalid. We match the income level to our experience and understanding of poverty and recognize the lack of fit.

Another way of validating a measure is to look at its behaviour with respect to other measures. A theory may suggest how some measures should move with respect to others because of the causal or other connection of the underlying phenomena, time relations, and relative directions and rates of change that they are likely to have with respect to one another. If an indicator does not behave as predicated by the model, then it may not be valid. A related approach is to look at the result of applying some stimulus to a system which should affect the indicator and seeing if it responds the way the phenomenon would. For social indicators, one could take advantage of a change in law or practice so long as it took effect quickly. Or, finally, one can simply try to get at a concept with more than one kind of indicator. To the extent they converge in behaviour, they are likely to be valid or at least measuring the same thing. All of these approaches are possible with social indicators, but they are not nearly as exploited as they could be.

Validity and Reliability

It is important to distinguish between validity and reliability as they are conceptually different and are resolved in different ways, but the tests can be the same. Validity has to do with whether the basic conception of the measure matches the concept, regardless of how well it is carried out in practice. Does the understanding of crime inherent in police records coincide with the view of crime that it is to stand in for? Does the idea of weighting goods in the GNP by market prices correspond to the weighting principle

implicit in our analyses?

Reliability, on the other hand, is a question of whether the process of collecting the data provides a clear and consistent channel for information. Do the police try to inflate or minimize crime rates? Do interviews become more and less careful at different times? Can we expect variations in the indicator to be due largely to the phenomenon we are trying to measure or to the peculiarities of the measurement instrument? If we try to determine the validity of an indicator solely by looking at the results of its application in a real situation, we may have trouble distinguishing between reliability effects and validity effects. Although testing against experience is important in validation of an indicator, the testing also has to occur at the level of ideas. This necessitates an explicit organizing principle for an indicator to be compared with the concept's implications.

Measurement with Theory

The theories by which an indicator was developed, through which it is linked to a phenomenon, and in which it will be used are the key to determination of validity. Understanding their role should also clarify why validity and context of application cannot be fully separated. Measures may be designed with varying amounts of theory and some may be almost entirely empirical.[1] An empirical measure is one for which the components are selected and combined without any clear reasoning relating them to an idea. Often the idea may not be explicit or may be so fuzzily defined that the indicator itself ends up providing the definition. The leading and lagging

indicators for the business cycle are such measures, selected because they demonstrated cyclical behaviour, which in turn came to define the business cycle. Even less systematic is the way local governments and agencies develop data to back up policy and program proposals. When there is great pressure to produce numbers and do so quickly, as with Environmental Impact Statements or grant proposals, staff choose whatever data are readily available and often by default they acquire the meaning of whatever concepts are involved in the analysis. Such indicators are not unrelated to the concept, but the extent and nature of the relationship is seldom spelled out, nor is it often stated what the intended concept is nor what the indicator represents. For example, numbers of families on welfare or crime rates may come to be indicators of social disorganization though the meaning of this term is unclear. In any case, the indicators may not be related unambiguously to it. Getting onto the welfare rolls could represent a higher level of social organization than not getting on the rolls.

A third type of empirical indicator is often a composite measure, intended to represent some broad concept with different meanings to different people, like quality of air, housing or even of life itself. Although the concept may be stated ahead of time, unlike the other examples, it remains too fuzzy to be operational or to specify the model linking concept and measure. Components are sought in haphazard fashion, combined according to an arbitrary weighting system. The U.S. standard budget is an example of such an indicator. As there was no theory to get from the idea of a

level of living norm to a measure of it, the components were chosen each in a somewhat different ad hoc way, with, for example, housing standards from Public Health Association and clothing standards from actual buying patterns.

All such indicators can be validated to the extent that they can be compared with the results of other indicators of the concept, if they exist, or by intuitive comparison with experience. They may even be useful predictors of other things we want to know, but they are difficult to trust because they are difficult to understand and their implications have not been spelled out. We cannot tell when or where they are suddenly not going to work any more because we never knew why or how they did work in the first place.

The possible uses of indicators are many, ranging from problem definition and goal setting to forecasting of trends, predictions of change, prescription of policies and evaluation. Some of these require a greater causal or theoretical content than others for the indicator. Certainly prediction, prescription and evaluation are meaningless ideas without some causal theory. Highly empirical measures chosen because of high correlations with other things or simply pragmatically cannot stand in well for ideas nor help in analysis.

The Interactiveness of Concept and Construct

An important reason for trying to examine the concept behind the indicator and the model or framework into which it fits is that it may not turn out to be precisely what we had in mind. If we do not do so, we can, by inadvertence, allow the construct itself to shape our

mind set. It has often been noted that we tend to solve the problems we have learned to measure, and perhaps only recognize as problems what we know how to measure. The particular shape we ascribe to the problem often has a lot to do with how it is measured. Housing quality is an issue of size, deterioration and plumbing because we have measured these, but not of neighborhood amenity because we do not know how to measure that. On the other hand, our conception of pollution, at first a vague idea in most people's minds associated with yellow mists on the horizon and junk floating in the rivers, is solidifying into such ideas as levels of BOD in water.

Often the specific definition of a concept only comes as you try to measure it. In the twenties in the U.S., for example, there was not a clear enough statement as to what unemployment was to provide a criterion for who was unemployed. (Was it people who had no regular work, who were looking for work, if so how much work was to be considered employment and what do you do about people who turn down jobs?) As the government began to experiment with surveys, the concept evolved from a fuzzy to a more specific one, including primarily those who were putting pressure on the job market. The decision was partly based on the fact that it was less ambiguous to ask and answer questions about job hunting activity than about work one would like under some other circumstances.

Ultimately, concept and indicator will never be totally separable. The only way we "see" a concept or test its relevance to real life is through constructs we apply. We are selective in what we observe and we fill in what we don't see with what we expect

to be there (for a discussion of how this happens even at the simplest level of visual perception, see Hanson). Thus, indicators and concepts inevitably evolve together and both may well be derivative from similar frames of reference.

This suggests that merely to determine validity in terms of the match between indicator and concept may be begging the question. It is also important to ask whether the whole interconnected measure and concept are valid according to the frame of reference one wishes to apply. This includes the analytic context, such as economics or sociology, as well as one's personal understanding, values, and orientation to change and the values of the group or society. The kind of solution desired is often a factor in the choice of concept and indicator. There is no reason why it should not be as firm a ground to begin on as any other. In any case, if the terms of policy discussion involving an indicator may be decided on at the point of designing the indicator, then it is appropriate to have a participatory, public process of indicator design. Indeed, if an indicator is to be valid for public policy use in meshing with societally acceptable conceptions of problems and solutions, such a process may be essential.

Efforts to measure poverty or indicate it in quantitative terms are the result of a deliberate or unwitting selection of a particular concept of poverty. Measurement in terms of an absolute income level suggests that poverty is a problem of material resources and nothing more. To measure it as income relative to the rest of the population suggests it is in part a social-psychological problem

in terms of self perceptions and that need is a socially determined phenomenon. To measure it in terms of behaviour or social characteristics is to define poverty as a cultural phenomenon or a problem of deviant behaviour. To measure it in terms of power or the openness of opportunity is to subscribe to a model which says that the system is the cause of the problem. Each of these views has a philosophical and value base; each has implicit in it a different range of solutions from income support to social work to radical restructuring. The validity of the indicator for a user depends ultimately on his acceptance of a whole framework of assumptions.

Implications for Indicator Designers and Publicists

Those proposing new indicators or new designs for indicators should make clear the frame of reference in which they work. This may be more difficult than it sounds as we tend to take the underlying questions for granted. What are the kinds of problems that concern us? What elements in the environment do we take to be manipulable and what do we try to explain? The sociologist may take as given an economic system and ignore it in trying to explain discrimination or social mobility on the assumption that there is a social structure and set of role relationships which are principal causal factors. An economist who was interested in the same problem (and they are relatively rare -- mainstream economics assumes away discrimination in the perfect market assumption) would take social structure as given and explain the results through the functioning of the market.

A political scientist focuses on who has power and how they get it, while a policy analyst or planner is more concerned with how an actual decision is made or a particular action taken. In parallel fashion, the representative of city government or of a functional agency will confront a problem in terms of the options open to them, constraints placed on them, and the desires of their constituency.

Secondly, it is not enough to simply describe the techniques of structuring an indicator if a user is to get any handle on validity. The indicator producer needs to define the organizing principle behind the indicator and the extent to which it deviates from that as well as the concept it is intended to measure. In many cases it may be a mixture in some indeterminate way because of compromises required for political or technical purposes, but this should be explained. While users may wish to apply the indicator to some other concept (for which it could turn out the indicator is as well or better suited), such a description is helpful in providing a guide to the many details that cannot be fully explained. For example, poverty is measured on a principle of equivalent levels of living for individuals so family income is used, adjusted by family size. If indicator designers state clearly the concept they wish the indicator to represent and the way they expect the phenomenon to be related to others, they can suggest ways this indicator, if valid, could prove to be related to others in the future, so users can apply their own tests.

Finally, a researcher can on his own partially validate an indicator by trying to get at the concept in another way and compare the results. In the effort to find measures which would identify educational priority areas in England, the results of applying the indicators were compared with the evaluations of knowledgeable bureaucrats and others familiar with the areas (Little and Mabey, 1972). This, of course, necessitates a clear concept of what one is trying to get at, in part in this case to explain to the informants, but also to interpret any differences in the results and decide whether to ascribe them to invalidity or simply to the fact that the other indicator grabs a different piece of the problem. A composite measure of school quality could be compared with public perceptions of school quality, rates of job or college placement.

In general, for all of these approaches, simple measures with obvious meanings are likely to be best and purely operational measurement should be avoided.

Implications for Statistical Policy

For government publications presenting indicators, it is not enough simply to give tables of data explaining no more than the statistical peculiarities or irregularities of collection. Validity should be addressed. But, you may say, many official statistics are not designed to reflect on any particular concept but are for a range of purposes in a range of contexts, so most of the validity tests cannot be applied. This may be so for some measures like population or numbers of housing units. But most government statistics are more pointed than these. Housing is given by number of people per room, employment rates by race and wage levels by sex.

These choices represent distinct conceptions of the nature of problems and policy issues. For a statistical agency that is supposed to be policy neutral to state baldly that a particular statistic is designed to show the extent of discrimination against women in employment is, at least under current conceptions of a statistical agency's role, politically untenable and may make the data itself suspect. Agency statisticians have a responsibility to work toward making more explicit and available to the user public what they see as the objectives of the indicators, however. Only then will it be possible to discuss how well the indicator represents the concept. Since the users will tend to assume a meaning for it in any case, this does not do more than help insure that we talk in similar terms and make more valid inferences. We may ultimately have to change the norms about the role of statistical agencies and the conviction that it is possible for statistics to be policy- and value-neutral before such a discussion can be integrated with government statistics presentation.

A second implication for statistical policy is that a highly rationalized system of statistics production with no overlap and guided by a limited conceptual framework is one in which validation of an indicator may be difficult. This goal has been implicit in many discussions over the years on U.S. statistical policy where critics focused on getting rid of the irrationality and duplication in statistical efforts with more coordination and possibly central statistical planning. But in our wisdom we have ignored such pleas and continue to maintain a highly decentralized, duplicative system in which, for almost any indicator, we can find an array of others which are partially related and with the aid of which we can validate it.

A third implication for statistical policy comes from the problem of the interactiveness of concept and construct. If the statisticians can at least partially build into indicators conceptions of how the world works, what is important, and what can or should be manipulated, then they have some ethical responsibility to allow the public and policy makers to have input into indicator design. History shows that indicators that have had much impact on policy and programs in the U.S., like unemployment measures, the CPI, the GNP and even the standard budget, were developed in response to some important policy questions (deNeufville, 1975) and in accord with a prevailing problem definition and solution that would be acceptable.

Moreover, at all stages of development, users and experts from outside government participated in an advisory way at least in the design. The methodologies were available to the public, often complete with descriptions of the limitations. If users had trouble using or understanding the indicators, they had channels to the agency producing the indicators which in turn encouraged and sought out such feedback and was at least somewhat responsive. The U.S. has even institutionalized some permanent user group associations like the Federal Statistics Users conference, and the Labor and Business Research Advisory Councils to the Department of Labor. Hearings are held in Congress on the indicators that become important and there is opportunity to publicly criticize the indicators and to have them backed up as well by the array of users and experts.

This open process with feedback and often political negotiation and compromise combined with the inputs of technicians and analysts can be said to produce more valid indicators in a societal sense than a closed process. It legitimates the indicators. As a wider public agrees to agree on an indicator and its concepts because they see that experts and interest groups from a range of perspectives have done so, they come to accept a common frame of reference. The process modifies the analyst's conception also, however, and keeps it relevant to policy concerns. The disadvantage is that an indicator which is a product of compromise among differing perspectives may not represent anything. A solution may be not to try to do everything with one indicator, but to get several simpler ones measuring more limited dimensions of a problem.

Implications for Users

To determine the validity of an indicator, users will have to inform themselves far more than they often do about the nature of the indicator and think through their own objectives and assumptions as well. The analysts must be more explicit about the underpinnings of their work and the potential of the indicators to represent ideas. Practitioners will not only have to think through their own ideas and assumptions, but also read more than the conclusions of analyses and not encourage pat answers.

Experience with indicators like the unemployment rate and the crime rate shows that, as an indicator becomes more connected to public decisions, people inform themselves about it and become critical to the extent that it fails to mirror their conceptions and produce the choices they want. When Law Enforcement Assistance Administration grants were tied to local crime rates, it was amazing how quickly mayors and legislators became expert in the concepts and methods of the crime index.

Validity Over Time

We hear a lot of pleas from the academic world for continuity of concepts and methods in indicators for comparability in long-term analysis. These make sense in the context of many unnecessarily divergent measures in separately planned surveys. Application of the same measures is usually requisite to identifying changes in an underlying phenomenon. However, a slavish adherence to precisely the same construct, concept or method of data collection over time cannot always be counted on to provide genuine continuity, particularly over a long period.

Concepts and methods of getting at them inevitably change as the environment and perceptions and understanding of it change. The concept of what is an adequate level of living in the U.S. has changed radically over the years, for example, not just in the details, but in the basic principles.

Thus, concepts behind indicators and the ways of getting at them, since they are interrelated, may change with time, society and the state of knowledge. It may be meaningless to compare the levels of an indicator over thirty or forty year periods unless it has evolved too. Moreover, the time horizon of many policy questions is only likely to require looking back five or ten years for decline or improvement. Governments only last that long and public goals seem to require relatively short time horizons.

Footnote

[1] It should be noted that the term "theory" here is being used in its broadest sense to include any sort of preconception about how or why things work in particular ways.

References

deNeufville, Judith I. Social Indicators and Public Policy: Interactive Processes of Design and Application. Amsterdam: Elsevier Scientific Publishing Co., 1975.

Hanson, N.R. Perception and Discovery: An Introduction to Scientific Inquiry. San Francisco: Freeman Cooper & Co., 1969.

Little, A., and Mabey, C. An Index for Designation of Educational Priority Areas. In Shonfield, A. and Shaw, S.(Eds.), Social Indicators and Social Policy. London: Heinemann Educational Books, 1972.

PROBLEMS IN THE DEVELOPMENT OF SOCIAL INDICATORS

N. T. Jazairi
York University

This paper discusses in broad terms the problem of data and the scope for models in relation to social indicators.

The Data Problem

There are five major features about the sources of and developments in population data in general. First, until the turn of the nineteenth century, administrative data were practically the only available population data. Second, roughly since the first half of the last century, population censuses became a major additional source of population data. Third, sample surveys became a widely used method of collecting population data since World War II. Fourth, longitudinal or cohort studies of controlled samples have often proved to be highly useful in monitoring the development of certain phenomena. Finally, record linkage techniques started to gain popularity in some countries. All these data sources and developments are of great interest and significance to the development of social indicators. However, each of these five types of data has its own advantages and disadvantages in terms of accuracy, timeliness, relevance and costs.

Social indicators at present are mostly based on data collected routinely by registration, notification and general censuses. This type of data is difficult to trust and analyze in general, and in relation to specific problems in particular. Therefore, the available data may be poor; they may suffer from many imperfections especially if collected for general purposes or generated as a by-product of an

administrative process. Yet a critical approach even to the most untrustworthy data is likely to reveal some useful information. In particular, the quality of poor data could be improved by some validation, screening and testing procedures. Further, if there is some information of interest in an observable phenomenon then that information should be found in already available or newly gathered data. Thus if the available information is of no use to the particular problem under consideration then the first step is to collect the relevant data through the use of effective and economical sampling methods.[1]

Consider the following social problem. Law enforcement authorities in Canada believe that only about 10% of the rape crimes in this country are reported to the police. Assuming that the proportion reported to the police is stable over time and that we are interested only in the rates of change over time then the reported information is all we need. But suppose we are interested in the absolute total of the committed rape crimes, which is often the case: then it is not clear how to use the figures provided by the police records. In such a case, an indicator of the total rape crimes could be constructed on the basis of: reported rape crimes only; ten times the reported figure; some "compromise" estimate. But a trustworthy indicator must first test empirically the belief (or "maintained hypothesis") that 10% of the committed rape crimes are reported to the police. Such a test might seem exceedingly difficult in practice. However, the "random response" approach provides an effective and economical sampling technique designed to elicit such sensitive information without infringement on the privacy of the respondent.[2]

Associated with the general data problem is the well-known disagreement between academic and government statisticians concerning the reporting of sampling errors. Briefly, academic statisticians question the reliability of government statistics mainly on the ground that the magnitude and structure of the sampling errors are unknown; and government statisticians argue that sampling error is the least of their problems compared with non-sampling error, and as Julius Shiskin once dryly remarked: "with the resources we got, we will end up publishing only sampling errors". But the reporting of sampling error is especially significant only if the sample is random and the sample information is free of non-sampling error; for otherwise the use of sampling error is not obvious even in the context of weak statistical inference on the basis of, say, Tchebycheff's inequality. Thus the important point on which there should be no disagreement is that, in the absence of full coverage, reliable and representative data are obtainable only from probability samples. Further, the sample results should be condensed effectively, and any estimates of the population characteristics based on the sample information should be statistically optimal.[3] It is quite obvious that unless we approach the data within the framework of scientific sampling and estimation techniques, the reliability and validity of data-based inference is a matter of personal judgement.

I shall make only a passing reference to two other problems related to the data needed for the development of social indicators. First, the design of full-scale investigation and research plans to monitor social conditions is a difficult task, especially because of a

lack of experience in this field. This problem suggests that preliminary and small but representative studies preceding the main investigation project could be quite helpful for testing and adjusting the strategy and methodology of the full-scale investigation. Thus "pilot studies" are likely to play an important role in the development of social indicators. Second, ideally social indicators should be produced regularly and systematically, say, once a year as Social Trends is being published in the U.K. At any rate, the intervals at which social indicators are published depend on the frequency of data gathering. Some population data such as census data are available only every ten or five years. But population data could be gathered continuously within the framework of a sample survey similar to the U.K. continuous General Household Survey.[4] Moreover, ad hoc sample surveys, field studies and pilot studies could also be used to provide supplementary and up-to-date data which would facilitate the systematic and timely production and publication of social indicators.

The Scope for Models

The interrelationships between the variables of the social system, unlike the physical system, are often transient and characterized by complex irregularities.[5] The irregular and transient nature of social phenomena complicates the task of making valid and long-lived social indicators. It is not only that what is relevant and fashionable today could easily become irrelevant and unpopular tomorrow, but it is especially that what might be a perfectly valid proposition at one time might not be at another. The transient nature of social phenomena perhaps also explains why it is so difficult to establish "laws"

governing the evolution of the social system; it is not, however, imperative that observations, measurement and analysis take place only in the context of a formal theory.

Social action should not await the discovery of "sound theories" while society is faced with hard facts pointing to social and economic injustice. For example, in 1971, the median family income with male black heads of household in the United States was 72% of that of whites;[6] and in 1971, average family income in the Atlantic Provinces was 69% of that in Ontario.[7] These are facts indicating gross racial and regional inequalities in income distribution. Situations of this type demand positive social action despite the fact that we do not have sound theories to explain them.[8]

However, there is scope for at least modest models and theories which could help in the development of valid social indicators. For example, most social problems involve variables such as social status, educational background, occupational mobility, rural-urban background, age, family status and so forth. The study of such variables raises problems of definitions, problems of measurement and, in particular, problems of cause and effect relationships. The first of these problems may be solved by following some standard definitions or agreeing on new ones. The second may be solved by following a statistically optimal estimation procedure applicable to binary variables. But the analysis problem of cause and effect relationships is obviously very hard since these variables interact and we do not usually know how to relate each of them to the others nor how to account for their

combined and separate effects. However, the analysis of such problems affords experimentation on the basis of models such as, for example, regression analysis and the analysis of covariance. As a specific example consider the social problem of differentials in earnings between men and women. A social indicator of this problem may be based on the ratio of male-female average earnings. The validity of this indicator could also be enhanced by adjusting it for, say, age and profession by simple standardization techniques. But as Turnbull and Williams[9] showed recently, the analysis of this type of problem lends itself to broad experimentation using several versions of the basic regression model with both quantitative and qualitative variables taken into account within a formal framework.

Concluding Remarks

I believe it is clear from the general topics briefly discussed above that the social responsibility of the social indicators movement is so serious and the problems encountered in the development of valid social indicators are so complex that the subject of social indicators means and demands a lot more than the casual collection of miscellaneous social statistics. Indeed, it may not be an exaggeration to say that as we already have disciplines of "biometrics", "econometrics", "technometrics", etc., each addressing itself to the application of mathematics and statistics in its own field, perhaps we now need a new discipline of "demometrics" which addresses itself to the application of mathematics and statistics to social conditions and social problems at large.

Footnotes

[1] See: Finney, D.J. Problems,data, and inference. Journal of the Royal Statistical Society, 1974, 137, 1-22.

[2] See: Warner, S.L. Randomized response: A survey technique for eliminating evasive answer bias. Journal of the American Statistical Association, 1965, 60, 63-69 and 1965, 63-69; and B.G. Greenberg et al. Applications of the randomized response technique in obtaining quantitative data. Journal of the American Statistical Association, 1971, 66, 243-50.

[3] See: Deutsch, R. Estimation Theory. Prentice-Hall, 1965, especially chapter 2.

[4] See: Moss, L. General Household Survey: U.K. C.S.O. Statistical News, February, 1972.

[5] Barnard, G.A. The unity of statistics. Journal of the Royal Statistical Society, 1972, 135, 3.

[6] U.S. Office of Management and Budget. Social Indicators 1973. Washington, D.C.,1973.

[7] Statistics Canada. Perspective Canada. Ottawa: Information Canada, 1974.

[8] For a number of hypotheses based on current economic theory to explain racial discrimination in the labour market, see: Arrow, K.J. Some Models of Racial Discrimination in the Labour Market. Rand Corporation, 1971.

[9] See: Turnbull, P. and Williams, J. Sex differentials in teachers' pay. Journal of the Royal Statistical Society, 1974, 137, 245-58.

CHANGING EDUCATIONAL PATTERNS: THEIR IMPACT ON SOCIAL INDICATORS

Roger R. Woock

State University of New York at Buffalo

I shall take as my working definition of social indicators that provided by Raymond Bauer in the first chapter of his book, Social Indicators.

> This volume as a whole is devoted to the topic of social indicators -- statistical series and all other forms of evidence that enable us to assess where we stand and are going with respect to our values and goals and to evaluate specific programmes and determine their impact.[1]

This brief and ten-year old definitional statement contains the two aspects that are equally important in understanding the relationship of education to the general field of social indicators: (1) statistical series and forms of evidence, that is the objective and measurable, and (2) value goals and evaluation of specific programmes, that is the subjective. What I shall attempt to do in this brief essay is to suggest that the use of educational data in social indicators is problematic with regard to both quantification and normative judgment.

The relationship between social indicators and education has not generally been perceived as one of particular difficulty. Looking back over the past decade, it is quite clear that many social scientists interested in social indicators believed that education was an activity that could be measured directly and

clearly and about which reasonably unambiguous value statements could be made. The most important might be summarized as "the more education the better." The assumption that "an exposure to education yields a return"[2] has been probingly questioned in recent educational writings. Ivan Illich[3] over the past five years has directly challenged this assumption. Illich is certainly not the first writer to make a fundamental critique of the schools, but he is, I believe, the first to suggest abandoning the institutions of formal education entirely. Illich's impact has been on the ideas of the academic and intellectual community and not on the real world of public schools.

Another attack on this assumption has come from a very different source. The fate of school bond proposals in the United States strongly suggests that vast numbers, and perhaps the majority, of American citizens are questioning the assumption about more and better education. The fact that beginning in the late 1960's and continuing through 1973, well over three-quarters of all bond proposals for public schools were defeated in local elections,[4] is significant.

The 1974 report Youth: Transition to Adulthood[5] is important in considering educational patterns and social indicators for several reasons. First of all, the senior author, James S. Coleman, is a significant figure in the study of education in the United States. His 1966 study Equality of Educational Opportunity,[6] although controversial in some of its methodology,

is a major and significant attempt to measure the impact of differences in school services and school output across racial as well as regional lines. Secondly, the study does seem to make fewer assumptions than most concerning the innate value of formal education both for individuals and for society at large.

The first two chapter headings suggest the tone and the concerns of the report: "The History of Age Grouping in America" and "Rights of Children and Youth." Neither age grouping nor rights of children have been central to the concerns of social scientists or government officials looking at education in North America. Yet changes in either will directly affect the educational data base and thus what we can say about education and social indicators.

The school grade, Coleman argues, has become a fixed one-year segment in a 12-year sequence. These one-year segments are secondarily clustered in elementary, junior and senior high schools. Coleman goes on to contrast the current age grouping with the age integration of the one-room schoolhouse. He argues that the young in the one-room schoolhouse learned toleration and gained experience in teaching younger members of the group.

In a brief section dealing with segregation by culture and race, Coleman argues that public schooling in North America, rather than attempting to overcome separation by class and race, in fact supports that separation; indeed, separation has become structurally fixed in the institutions of public schooling itself.

See Coleman (1966; 1974) for further explication of these views.

What are the implications of Coleman's criticisms and recommendations for educational data and social indicators? One that presents itself immediately is the difficulty of obtaining clear and precise data concerning school attendance, educational achievement and educational progress. Social scientists looking at education have depended heavily on age grouping. All of the evidence presented by Cohen[7], by Duncan, and by Abbott Ferris[8] in his book, Indicators of Trends in American Education, depends on being able to make statements about age cohorts, assuming a commonality of experience and systematic progress through formal educational systems. If this systematic progress is modified, how much more complicated will be the job of quantifying and making useful statements about educational input and output?

Work study programmes also present a difficulty. How do we count youngsters in work study programmes? Do we count them as students? or workers? Do we create another special category? And beyond the label, what is the social meaning of a worker-student or a student-worker? So far, work study programmes have been so small in the total picture of education in North America that this has not been a problem. If,however,10, 15 or 25 percent enter such programmes, different measuring devices will be needed.

Before some of the new proposals put forth by Coleman can be successfully incorporated as part of social indicators,

they will need to be evaluated very carefully. The research tasks here are tremendous. For example, with regard to the broad work study programmes suggested by Coleman, the following research seems in order to assess the impact and the value of such programmes.

There would have to be a comparison of selected and non-selected students on a number of objectives, such as: the willingness to assume responsibility that affects others, the ability to engage in joint or interdependent work and, of course, performance measures on work-related skills. There would need to be follow-up studies which would include work histories of students in these programmes, employer ratings, and an examination of student attitudes toward school, self, and work. Comparisons would need to be made between youth employed in these programmes and youth with similar amounts of experience in ordinary part-time and summer work in order to learn what is gained, if anything, by the establishment and organization of these programmes through schools. Assessment would have to be made of employers' experiences and incentives necessary to induce employers to participate in the programme. And, finally, cost accounting of the programme would be necessary in order to learn how much it costs in addition to regular high school programmes. This kind of substantial and, in some cases, long-term research would need to be done before we could know what such a programme would actually mean for the participant or society. Without some judgment about the importance and the meaning of any work study programme, the social indicators

derived from them would be of very limited value.

In addition to the above work study research questions, there are vital research needs related to changes in the educational system that directly influence the successful use of educational data in developing social indicators of national well-being.

We know very little, for example, about the cost of part-time work to academic achievement or the returns from such work in terms of subsequent job availability and accumulated work experience. Several currently available bodies of data on the young such as the national longitudinal surveys (Ohio State), youth in transition (University of Michigan), and Project Talent data should be analyzed with such questions in mind. The benefits and costs of interrupting schooling are not well known. The phenomena of late completion of high school diplomas and late entrance into university are familiar, but what they mean in terms of benefits to the individuals and society is not well known. The impact of national service programmes such as the Peace Corps, VISTA, or the Company of Young Canadians should be examined in terms of their educational impact on the youth who participated in them. Discussions of the desirability of various alternative environments for youth are very much hampered by the lack of appropriate instruments to measure the impact of social institutions on those within them.

Often measurement is limited to indicators of academic

success: graduation, the possession of a degree, test scores, and economic success such as income and occupation. These measures do not capture all important aspects of an institution's impact. More research is needed on non-cognitive measures of personal development and more direct measures of social well being. If we still have a residual belief in the value of education for the "good life" then this last set of questions becomes extremely important.

Christopher Jencks[9] argues that holding other things such as social class and family background constant, education is not the force for social mobility which most of us in North America have thought it was. In a short and generally overlooked chapter in that volume, he strongly supports research about the non-cognitive effects of experience in educational institutions. Surely, if we are interested, as we should be, in more than counting degrees, years of schooling, and test scores, we must focus our attention on the quality of experience produced in the educational institutions of North America.

A Concluding Note on Social Competence

Underlying all support for formal education in North America lies the concept of social competence. Alex Inkeles defines competence as:

> The ability effectively to attain and perform in three sets of statuses, those which one society will normally assign one, those in the repertoire

> of one's social system one may appropriately aspire to, those which one might reasonably invent or elaborate for oneself.

Competence, then, is seen as an end product -- what a person is after he is successfully socialized into a society. Everyone referred to in this paper from Wilber Cohen to Ivan Illich, accepts this notion of competence as an important objective.

Perhaps we need another concept which views competence from a different perspective. I tentatively advance the idea of societal competence. This implies the importance of describing, measuring and evaluating societies as a whole. Social and societal competence are in some sense inextricably linked, and it is difficult to measure one without reference to the other but for a variety of historical reasons, the emphasis in North American society is on individual competence or incompetence in a social framework which is itself assumed to be reasonably competent. This emphasis results in considerable difficulties in relating educational programmes to social indicators. It does not help us see that the standard of educational need against which educational production is measured must itself be measured.

The move to a societal focus could well change the way in which we analyze educational and economic phenomena. Has the auto worker in Detroit or Oshawa suddenly become incompetent because his job no longer exists? Is he not rather a victim of societal incompetence, a victim of a socio-economic system that can no longer provide even a minimal measure of competence in the form of a weekly paycheck? A Ph.D. in philosophy driving a taxicab might not be seen as a case of

overproduction by the educational system but rather as a failure of society to organize itself in a way to use the talents, abilities and skills which its citizenry possesses.Given the recent history of the United States in both domestic policy and foreign affairs, one might imagine that helpful social indicators might point to a need for all the trained intelligence the society can muster.

While much of this paper is speculative, it does suggest that making sense out of educational systems -- which we must surely do before educational data can be very helpful in producing social indicators -- is becoming more rather than less difficult. Acknowledging this fact is clearly the first step toward solving the problems posed by educational change.

Footnotes

[1]Bauer, Raymond A. Detection and anticipation of impact: the nature of the task. In Raymond A. Bauer, (Ed.), Social Indicators. Cambridge, Mass.: M.I.T. Press, 1966.

[2]Lecht, Leonard A. Dollars and National Goals: Looking Ahead to 1980. New York: John Wiley and Sons, 1974.

[3]Illich, Ivan. Deschooling Society. New York: Harper and Row, 1970.

[4]Schultz, C.L., et al. Setting National Priorities - The 1973 Budget. Washington, D.C.: U.S. Government Printing Office, 1972.

[5]Coleman, James S. Youth: Transition to Adulthood. Chicago: University of Chicago Press, 1974.

[6]Coleman, James S. Equality of Educational Opportunity. Washington, D.C.: U.S. Government Printing Office, 1966.

[7]Cohen, Wilber J. Education and Learning in Gross, Bertram (Ed.), Social Intelligence for America's Future. Boston: Allyn and Bacon, Inc., 1969.

[8]Ferris, Abbott L. Indicators of Trends in American Education. New York: Russell Sage Foundation, 1969.

[9]Jencks, Christopher. Inequality. New York: Basic Books, Inc., 1972.

THE SOCIAL MEANING OF LABOUR INDICATORS

Alexander Matejko

University of Alberta

There are in the labour field several successfully applied indicators, e.g. unemployment (de Neufville, 1975), but there is a growing need to cover by indicators a much larger scope of labour phenomena. Henderson (1974) mentions as areas of concern the labour market, job security, job satisfaction, occupational mobility and labour management relations. Occupational mobility is particularly important from a sociological standpoint because of the crucial role of occupations in modern society as the main factors of social stratification in terms of economic classes, hierarchy of prestige, organizational power, and political influence (Blau and Duncan, 1967).

I would like now to review here some of the important indicators in the Canadian labour field without, however, attempting to cover the whole field. Of special interest for me are those indicators which are particularly useful in teaching the sociology of Canadian labour.

Indicators of Occupational Structure

As was already mentioned, changes in the occupational structure are of primary importance. Significant particularly in North America are indicators which show the transfer from an industrial society to a post-industrial society (Bell, 1973).

Thanks to the growing productivity of agriculture and its progressing

concentration, there is less need for farmers and farm managers as well as farm laborers and supervisors. Private household workers have become anachronistic in a society where labour is expensive and where households are well equipped with various gadgets. Operators have also declined in relative numbers thanks to the substitution of people by machines. On the other hand, professional and technical workers are gaining fast; a similar tendency may be seen with clerical and service workers (Handbook of Labor Statistics, 1975; Yearbook of Labor Statistics, 1975).

In order to gain better insight into transformations of the Canadian occupational structure, it would be necessary to have more precise indicators of the service component in the labour force. The pre-eminence of the professional and technical class, based upon a high level of education and various privileges is one of the most characteristic features of the post-industrial society (Bell, 1973). The available Canadian data so far do not allow measurement of the development of this class in all its basic components. This issue would necessitate a separate elaboration based on the dimensions of knowledge and technology as understood by Bell (1973).

Indicators of Labour Participation

The changing limits of labour mobilization say a lot about the social transformations of Canadian society. The growth of the Canadian labour force has for many years been faster than the increase in either population or the working age population. In the

period 1950-1970, this growth came from net immigration (28 per cent), increased labour participation rates (12 percent) and natural increase (60 per cent) (Economic Council of Canada, 1975).

The situation became different in the early 1970s. Net immigration contributed much less to growth in the labour force. In the Canadian economy of the 1970s which depends so much on the tertiary sector, most of the output growth is achieved by the employment of additional people and the rest through productivity gains. The drop in fertility rates starting in the middle 1960s (Kalbach & McVey 1971) will in the long term diminish the contribution of natural increase to labour force growth.

The fast numerical growth of educated people seeking jobs does not go together well with the supply of employment opportunities. The mismatch between applicants and jobs is particularly evident among young people. The percentage of people in the labor force with at least some university education grew in the period 1960-1972 from 8.5 to 22 per cent; among males the percentage of those with at least some secondary education grew from 41.5 per cent to 51 per cent. However there is a real need for skilled workers, and not for people with liberal arts degrees, which may lead to disillusionment for students who cannot find employment in their fields of study.

There is also another problem related to the rising educational level. Changes in the sex structure of the labour force and its educational attainment (female workers have, on the average, even better education than male workers) create demands for a participative

management style, a more democratic type of organization, better fringe benefits, and a more gentle treatment of people in their places of work.

The indicators of the growing female work participation have an obvious significance for family life, living standards and the relationships between the sexes. Indicators of male and female labour participation should be supplemented by more specific statistical information on the conditions which influence both men and women either to look for gainful employment or to move into another field of social activity.

International comparative indicators are, in this respect, needed very much. For example, see the comparison of production workers' compensation in Canada and in other countries in Table 1. In the first half of the 1970's, there was in general a narrowing gap between the U.S. and other developed countries, but Canada together with Sweden and West Germany went further in this respect than others, which suggests the levelling of working class conditions in the developed world, as well as the progressing similarity in the competitive position of labour. According to the U.S. Council on International Economic Policy, in the period from 1960 to 1976, the hourly compensation rates for industrial production workers grew, in U.S. dollars, from $2.13 to $7.39 in Canada, from $1.20 to $8.50 in Sweden and from $0.83 to $6.70 in West Germany. In the U.S., the rates rose from $2.66 to just $6.90 (The Manchester Guardian Weekly).

Table 1: Estimated Hourly Compensation of Production Workers in Manufacturing for 10 Countries.

Country	Estimated compensation per hour worked				Additional compensation as percent of hourly earnings
	1974 (U.S.$)	Percent Change 1970-1974	U.S.=100 1976	1970	
Canada	$5.47	+ 58	107	82	22
United States	5.70	+ 36	100	100	30
Japan	2.68	+171	47[1]	24	13
Belgium	5.20	+154	91[1]	49	70
France	3.38	+ 93	67	42	63
West Germany	5.29	+128	97[1]	55	51
Italy	3.27	+ 87	57[1]	42	83
Netherlands	4.93	+148	86[1]	47	63
Sweden	5.48	+ 87	123	70	36
Britain	2.59	+ 75	57	35	18

[1] 1974

Source: U.S. Department of Labor, 1975; 1976. The Manchester Guardian Weekly.

The relative cost of Canadian labour in comparison with other developed countries is a very important indicator of Canada's relative well-being. It would be necessary to elaborate this indicator not only for economic purposes but also for use by sociologists.

Indicators of Labour Unrest

In the field of labour unrest and dissatisfaction, we must rely mainly on indicators limited to labour disputes (Table 2). They show that Canada is well above other developed countries not only in the recent indices of unrest for the 1970's, but also in the long time perspective. In the period 1971-1975, the per cent of estimated working time lost on work stoppages has grown from 0.16% to 0.53% (almost 11 million man-days in 1975 and almost 500,000 workers were involved).

Table 2: Time Lost to Industrial Disputes in Canada and Other Countries (in days lost per 1,000 persons in nonagricultural industries)

Year	Canada	Italy	United States	United Kingdom	France	Japan	Germany	Sweden
1955	466	400	571	180	277	204	52	65
1960	156	427	358	138	89	216	2	7
1965	416	567	388	127	71	201	2	1
1970	970	1560	956	488	114	120	4	48
1975	1305	1589[1]	465	286	215	159	4	16[1]
Average 1955-74	582	1002	542	293	196	181	35	30

[1]1974

Source: U.S. Department of Labor, 1975; 1976. The yearly average was calculated by the author.

In order to understand better the background of workers' unrest in Canada, we need indicators of job satisfaction (Seashore and Taber, 1975), powerlessness, meaninglessness, social isolation, self-satisfaction, alienation and, in general, of the quality of working life (Portugal, 1973; Davis & Cherns, 1975). There are now several centres doing systematic research in this area: the National Quality of Work Center in Washington, International Council for the Quality of Working Life in London, Work in America Institute in Scarsdale (N.Y.), the Quality of Working Life Centre in Los Angeles, Work Research Institutes in Oslo and others.

The content of work done by the blue collar workers in Canada, as well as its external conditions, may in many cases justify boredom, dissatisfaction, absenteeism or unrest (Rinehart, 1975).

Even though the standard work week decreased in the period 1951-1971 from 44 hours to 39 hours, and the per cent of non-office employees who received at least two weeks paid vacation increased in the period 1961-1971 (Perspective Canada, 1974), the level of dissatisfaction is quite substantial.

According to 1968 survey data for various Canadian industries, 20 to 26 per cent of blue collar workers showed a low level of satisfaction with working and wage conditions. Feelings of personal recognition, opportunity to control one's own work and an awareness of accomplishment at work were low for 44% of workers in the automobile industry, and for about 30 per cent of workers in other industries. Only in the oil industry was there a substantial percentage (25%) of very satisfied workers (Perspective Canada, 1974).

The Indicator of Unemployment

The Canadian average unemployment rate for the period covering the last fifteen years is higher than in other developed countries (Table 3). It is also important that even among males 25 to 54 years old (a much better indicator), unemployment in 1973-74 was at the relatively high level of 4 per cent (Economic Council of Canada, 1975).

Indicators of Union-Management Relations

There are several factors which shape the current industrial relations scene in Canada: the fast growth of the labour force, the rising educational level of workers, the erosion of incomes by inflation, the difficulty in maintaining cost and price stability, etc. It becomes

Table 3: Indicators of the Transformations of the Labour Force in Canada and Some Other Countries in the Period 1950-1975 (figures expressed in percentages)

Indicator		Canada	United States	Great Britain	West Germany	Sweden	Japan
Wage & Salary Workers	1950	68	76	88[1]	64	77	41[2]
	1975	83	83	89[3]	86	89	68[4]
Labour in Agriculture	1950	20	11	5[1]	23	20	34[2]
	1975	5	4	2[3]	7	7	12[4]
Labour in Manufacturing	1950	25	24	37[1]	29	31	18[2]
	1975	20	19	35[3]	39	27	27[4]
Average Unemployment Rate 1950-74		5.4	5.0	2.9	0.8	1.9	1.4

[1] 1951; [2] 1955; [3] 1973; [4] 1974

Source: U.S. Department of Labor, 1975; 1976. The average unemployment rates were calculated by the author.

---

quite obvious to many observers that in order to meet the needs and aspirations of the young workers, the system of industrial relations must be redesigned (Wood, 1974; 1976; Jamieson, 1973).

There are already available some useful indicators of work

conditions in Canada, but this list should be updated and considerably extended. Over 70 per cent of office and non-office workers in 1969 participated in private pension plans; 80 per cent of non-office workers but only 52 per cent of office workers received time and a half or more for overtime worked during a normal working day; only a few per cent participated in profit sharing plans (Perspective Canada, 1974).

Union membership in Canada has remained for over twenty years at the level of one third of all non-agricultural paid workers primarily because unions have not been able to establish themselves strongly enough in services, except for public administration.

There are four basic features characteristic of trade unionism in Canada. First of all, half of unionists are members of the so-called international unions, in reality, American unions. This creates a problem of autonomy for Canadian sections from the U.S. union headquarters; at the present time the degree of autonomy varies widely from union to union, but in many cases is restricted (Teeple, 1972). Secondly, Canadian unionism has its own political arm, distinct from U.S. unionism, this being the New Democratic Party. Thirdly, Canadian trade unionism is involved in some serious struggles which are evident in the large number of work stoppages. Fourthly, there is a real problem with democratic participation in unions which become bureaucratized. There is a need for indicators related to these features of Canadian trade unionism.

Indicators of collective agreement coverage are very important

for an understanding of union-management relations in Canada. Only 23 per cent of office workers but 65 per cent of non-office workers, and 53 per cent of sales persons, transportation operators, nurses and hospital technicians were covered in 1971 by these agreements (Perspective Canada, 1974).

We need indicators on collective agreements which would show shifts in their content. For example, how much of a growing emphasis is on items other than wages, increments and fringe benefits? The constructive co-operation between labour and management depends very much on the development of a new kind of collective bargaining which would contribute directly or indirectly to improved work efficiency and participation of workers.

Suggestions

The Canadian labour force has been growing very quickly in comparison with the increase in total population. From the turn of the century to the early 1970's, it grew 372 per cent compared with 343 per cent of the working age population. This creates the problem of job placement for people who are willing and able to work and also, in a longitudinal perspective, opens the question of how to secure adequate sources of sustained growth. With the decline in natural increase, the inside flow of people to the labour force will diminish. On the other hand, improved productivity resources are not adequately utilized. From the 1950's until the early 1970's, the income per worker in Canada grew much faster than actual output which led to inflation (Economic Council, 1975; 1977).

We need more indicators on the rate of growth of various components of the labour force, as well as on the socio-psychological and economic reasons for this growth. A large scale sociological survey could provide some insight into issues which have so far been only partially illuminated by statistical data.

The new structural diversity of Canadian labour must be analysed through the application of those social indicators which would make it possible to measure the impact of the modern division of labour on social stratification in Canadian society. We need to gain further insight into class structure and its connection with occupational structure (Porter, 1965; Clement, 1975). We also need to know much more about poverty location within the configuration of the labour force (Adams et al, 1971).

Even though the work week has considerably diminished over the past 25 years and wages have improved in several industries, there is a considerable level of dissatisfaction among working people. We need indicators to show to what extent the rising aspirations of various occupational categories have and have not been fulfilled.

The role of immigration in growth of the labour force declined from 68 per cent in the first half of the 1950's to 33 per cent in the period 1966-1972. It would be very useful to have some indicators specifically related to the labour utilization of immigrants and their potential to contribute to the well-being of the country. Such information could be of great importance for improving immigration policy.

References

Adam, Ian et al. The Real Poverty Report. Edmonton: Hurtig, 1971.

Bell, D. The Coming of Post-Industrial Society: A Venture in Social Forecasting. New York: Basic Books, 1973.

Blau, P.M. and Duncan, O.D. The American Occupational Structure. New York: Wiley, 1967.

Clement, W. The Canadian Corporate Elite: An Analysis of Economic Power. Toronto: McClelland and Stewart, 1975.

Davis, L.E., and Cherns, A.B., (Eds.). The Quality of Working Life (Vol. 2). New York: Free Press, 1975.

de Neufville, J.I. Social Indicators and Public Policy. Amsterdam: Elsevier, 1975.

Economic Council of Canada. Twelfth Annual Review: Options of Growth, 1975. Ottawa: Information Canada, 1975.

———— Thirteenth Annual Review: The Inflation Dilemma, Ottawa: Information Canada, 1977.

U.S. Department of Labor. Handbook of Labor Statistics 1975 (1976). Washington: U.S. Government Printing Office, 1975 (1976).

Henderson, D.W. Social Indicators: A Rationale and Research Framework. Ottawa: Economic Council of Canada, 1974.

Jamieson, S. Industrial Relations in Canada (Second Edition). Toronto: Macmillan of Canada, 1973.

Kalbach, W.E., and McVey, W.W. The Demographic Bases of Canadian Society. Toronto: McGraw-Hill, 1971.

Matejko, Alexander J. Overcoming Alienation in Work. Meerut: Sadhna Prakashan, 1976.

Perspective Canada: A Compendium of Social Statistics. Ottawa: Information Canada, 1974.

Porter, J. The Vertical Mosaic. Toronto: University of Toronto Press, 1965.

Portugal, A.H. Current research on the quality of working life. Industrial Relations, 1973, 28, 4.

Rinehart, J.W. The Tyranny of Work. Toronto: Longman, Canada, 1975.

Seashore, L.J. and Taber, T.D. Job satisfaction indicators and their correlates. American Behavioral Scientist, 1975, 18, 3.

Teeple, G., (Ed.). Capitalism and the National Question in Canada. Toronto: University of Toronto Press, 1972.

The Manchester Guardian Weekly. 116/9, 1977: 16.

Wood, D.W. The Current Industrial Relations Scene in Canada. Kingston: Queens University, Industrial Relations Centre, 1974 (1976).

Yearbook of Labor Statistics. Geneva: International Labor Office, 1975.

CORRELATES OF SELF-REPORTED VICTIMIZATION AND PERCEPTIONS OF NEIGHBOURHOOD SAFETY[1]

Daniel J. Koenig

University of Victoria

Recent years have witnessed the emergence of a flourishing movement toward the development of social indicators. Researchers and practitioners alike have increasingly discussed developments in the field of social indicators at meetings such as the 1974 World Congress of Sociology and the Conference on Social Indicators held at Edmonton in 1975. The dissemination of research related to social indicators has also been facilitated by the founding of a new journal, Social Indicators Research, in 1974.

Among the central concerns of researchers involved in this growing interest in social indicators are the development of measures which are inexpensive to obtain, measures which indicate sufficient stability to monitor differences cross-nationally and over time and measures which will reflect individuals' perceptions of well-being. An attempt was made to address these concerns with a mail questionnaire which was administered to a province-wide sample of adults randomly selected from the British Columbia federal voters' lists in March, 1974.[2]

On the basis of data obtained from this survey, analysis is currently underway to explore the cross-national applicability of social indicators developed by Andrews and Withey (1973) to measure perceptions of well-

being, as well as to assess the suitability of mail questionnaires to obtain these data. The current paper reports on another aspect of this study which was the development of a small number of items, suitable for use in mail questionnaires, to monitor self-reported criminal victimization and subjective apprehension about potential victimization.

It is evident that mail questionnaires entail a small fraction of the expense occasioned by the use of personal interviews. For example, Waller and Okihiro (1974) noted that the low incidence of certain types of crime requires large samples to provide reliable measurements. In 1974, they estimated that a well-executed survey of 1,000 households by personal interview would cost about $75,000 - 100,000 (and costs are increasing annually).

Attention has frequently been called to the many sources of unreliability and invalidity in official crime statistics (Giffen, 1965; Canadian Committee on Corrections, 1969; Skogan, 1975). In addition, Douglas (1971) has extensively criticized the biases implicit in official statistics as a whole. However, observers (Courtis, 1970; Skogan, 1974; Skogan, 1975) have called attention to the fact that self-report surveys also contain many, though different, sources of unreliability and invalidity. Principal among these are the telescoping of salient past events into a recent time frame, faulty recall of other events and respondent perceptions of having been criminally victimized by events which fail to meet the legal criteria -- either for the specific crime being reported or for any other crime.

Skogan (1974) observed that concern about the accuracy of official statistics provided the impetus for social scientists interested in the

development of social indicators to gather alternative data by means of self-reported criminal victimization surveys. Subsequently, Skogan (1975) reviewed the different types of measurement error involved in official statistics and in victim surveys. He observed that both the measurement observations and the errors vary greatly and that quite different kinds of crime statistics are generated by the two methods.

Perhaps Skogan was too restrained. A case can be made that official statistics simply measure official processing of criminal violations coming to the attention of authorities. As such, it is meaningless to utilize them for any other purpose (such as estimating the actual incidence of crime in any given society). Similarly, the premise of this paper is that victim surveys measure perceptions of and apprehension about criminal victimization, rather than the actual incidence of crime in any given society. For the researcher interested in social indicators, the sources of measurement error in victim surveys may become virtues rather than vices, as long as the errors are relatively consistent cross-nationally and over time.

Such victim surveys provide a measure of individual perceptions of well-being. This is particularly true since events which do not meet the legal criteria for crime <u>are</u> viewed by some respondents as incidents of victimization, and some incidents of victimization are forgotten or dismissed while others are remembered as having occurred more recently than they actually did. In addition, there is some unawareness or dismissal of victimization experienced by other members of one's household.

These sources of bias provide important data for the social scientist interested in social indicators. As Merton's famous example of perceived bank insolvency demonstrates, people's perceptions guide their behaviour and those perceptions can create a new reality regardless of their objective accuracy. Such a framework permits sense to be made of a finding such as that of Michalos (1975), who noted an amazing similarity between Canadians and Americans in fear of crime although vast differences exist in rates of violent crime between the two countries. Regardless of objective reality, the fact that Canadians are almost as fearful of crime as Americans (possibly attributable to unwarranted influence from American media, politicians and government officials), is an important datum for the student of social indicators--as it should be for government planners. An excessive preoccupation with accurately measuring "real" crime rates would not likely uncover this datum, nor would it be likely to influence it. As Andrews (1974) has observed, a case can be made that only a loose relationship may exist between objective conditions of people's lives and their perceptions of well-being. In the final analysis, only perceptual indicators provide direct measures of individuals' evaluations of personal well-being--regardless of the objective accuracy of these perceptions.

If perceptual measures may be at least equal to behavioural measures as social indicators, then it is legitimate to ask whether victim surveys should be oriented toward improving behavioural measures or rather to developing benchmark perceptual measures which can be compared cross-nationally and monitored over time. If one opts for the importance of perceptual indicators, then the expense of personal

interviews for data collection becomes unnecessary because the need no longer exists for accurately and objectively categorizing perceived victimization into official categories of crime.

Moreover, the use of mail questionnaires rather than personal interviews offers at least four advantages. First, mail questionnaires eliminate reactive biases occasioned by the presence of an interviewer, or worse, of interviewers. Second, the greater anonymity provided by the use of mail questionnaires, rather than personal interviews, can be expected to reduce a social desirability response set which may be a particularly important source of underreporting for some types of victimization such as rape. Third, mail questionnaires make it possible to gather data inexpensively and at regular intervals. Finally, because victim surveys by mail questionnaire make it all but impossible to even attempt to mirror official crime categories, only generic types of perceived victimization can be studied. Such a "limitation" is actually an advantage. Data on generic types of victimization readily lend themselves to cross-national and historical comparisons because they cannot easily be oriented toward specific classificatory criteria of official crime categories for a specific time and place (which, of course, vary with changes in legal criteria both temporally and cross-nationally).

For example, in the current exploratory research, an effort was made to formulate questions which would tap respondents' perceptions of generic types of victimization. Data were collected in four broad areas: vandalism, theft (burglary and larceny), threatened or actual assault, and threatened or actual robbery. The specific questions asked were:

During the last 12 months, has any of the following happened to you or anyone who lives with you?

1. Theft of a personal belonging from residence, garage, car, store or office?
2. Robbery by threat or force?
3. Mysterious disturbance, damage or vandalism to personal property or buildings?
4. Assault or threatened physical harm?

How did such measures perform? As can be seen in Table 1, 21% of the sample reported that they, or a member of their household,had been victimized by a "mysterious disturbance, damage or vandalism to personal property or buildings" during the preceding twelve months. The corresponding figures for "theft of a personal belonging from residence, garage, car, store or office," "assault or threatened personal harm," and "robbery by threat or force" were 24.9%, 4.3% and 1.1%, respectively.

Table 1: Victimization and Multiple Victimization of a Household Member in the Past Year: Four Generic Crimes

Experienced in Year			Also Experienced			
	(N)	Percent of Total Sample	Vandalism	Theft	Assault	Robbery
Vandalism	(198)	21.0%	-	46.7%	10.7%	1.5%
Theft	(236)	24.9	39.5	-	3.9	2.6
Assault	(41)	4.3	52.5	22.0	-	7.3
Robbery	(10)	1.1	33.3	60.0	33.3	-

Since average household size for British Columbia was reported at 3.27 for 1971 (The Financial Post Survey, 1972), we can extrapolate to the probability of an individual within the sample having been victimized by one of these four generic types of predation. Those probabilities

would be vandalism, 6.4%; theft, 7.6%; assault, 1.3%; and robbery, 0.3%. However, in this pilot survey, even if an individual was victimized more than once, or if two or more members of a household were separately victimized by the same generic type of predation, only one incident of each of these types of predation would be counted in the current survey data.

Thus, the above estimates are a significant understatement since self-reported perceptions of multiple victimization are commonplace in British Columbia, as has also been reported for San Jose and Dayton, where with each incident of victimization, there was a significant increase in the probability of being subsequently victimized (U.S. Department of Justice, 1974B). For example, one-third also reported a household victimization by vandalism, 60 percent by theft and one-third by assault. Of those households victimized by assault, 52.5% were also victimized by vandalism, 22% by theft and 7.3% by robbery. For households victimized by theft, 39.5% were also victimized by vandalism, 3.9% by assault and 2.6% by robbery. Finally, of those households victimized by vandalism, 46.7% were also victimized by theft, 10.7% by assault and 1.5% by robbery.

Not only is perceived multiple victimization commonplace, but other research has found that the risk of victimization is differentially distributed across various subpopulations. For the United States, a national study found that victimization rates tended to be disproportionately high for those who were younger, male, non-white and at lower income levels, except for homicide and larceny over $50.00 (The President's

Commission, 1967). Other studies (U.S. Department of Justice, 1974a; b) support these findings and further suggest that victimization rates for some crimes are disproportionately high among unmarried individuals.

To what degree are these patterns reflected by socio-demographic variations in perceived victimization in British Columbia? Percentages of household victimization by socio-demographic characteristics are presented in Table 2 for each of the four generic crimes examined. As can be seen, except for vandalism, perceptions of household victimization declined as age increased for each of the generic crimes.

Moreover, for all four generic crimes, perceived victimization was disproportionately high among males, ethnic Canadians and the non-married--results extremely similar to the American pattern. Other findings included a disproportionately low rate of perceived victimization among Protestants and a disproportionately high rate among non-Christians for each of the four crimes. Except for robbery, labour union members in the sample were also more likely than non-members to have perceived household victimization for each type of crime.

To this point, subjective data on generic victimization collected by mail questionnaire in British Columbia indicate a similar pattern to American data collected by personal interviews with respect both to multiple victimization and to socio-demographic variations in victimization experiences. Such a pattern suggests that mail questionnaires can be considered a reliable alternative to personal interviews in data collection involving victim surveys. Moreover, other data in the survey also permit an assessment of the validity of the survey victimization data.

Table 2: Percentage of Household Victimization By Respondent Socio-demographic Characteristics: Four Generic Crimes

	Vandalism	Theft	Assault	Robbery	(N)[a]
Age		*	*		
25 or less	22.6%	31.0%	7.7%	2.6%	157
26-39	24.9	28.7	5.4	0.8	261
40 or more	18.5	21.4	2.9	0.8	528
Sex	*		*		
Male	25.2	27.6	6.0	1.1	453
Female	17.3	22.5	2.8	1.0	498
Ethnic-Canadians[b]	21.2	31.1	5.1	3.4*	117
Area live or work[c]					
Lower Mainland	21.8	25.9	3.7	1.0	497
Other Community,40,000+	21.6	21.6	7.2	2.6	154
Other	19.0	24.9	4.2	0.3	290
Income					
Under $10,000	18.1	23.0	4.4	1.5	347
$10,000 - $14,999	22.9	24.8	5.1	1.3	298
$15,000, or more	23.7	28.8	4.1	0.4	244
Education					
Primary	18.1	29.0	3.5	0.7	145
High School	20.6	23.8	4.3	1.0	605
University	24.4	25.8	5.1	1.5	199
Labour Union					
Member	25.1	28.4	6.8	0.9	224
Non-member	19.8	23.8	3.6	1.1	727
Marital Status	*	*	*		
Widowed	17.4	23.9	-	-	48
Married	19.3	22.5	3.7	1.0	711
Divorced	17.1	28.6	5.9	-	35
Separated	34.4	40.6	15.6	-	33
Never Married	28.8	33.6	6.4	2.4	125
Religion	*	*			
Protestant	17.0	21.1	3.9	0.5	598
Catholic	26.8	30.8	2.8	2.1	143
Other[d]	29.2	32.4	5.9	2.2	185
Total Sample	21.0	24.9	4.3	1.1	956

Table 2, continued: Footnotes to Table

*$p \leq .05$ for the table cross-classifying the variable by the type of crime.

[a]N does not necessarily add to the total sample for any given variable since some respondents did not answer all questions. In such cases of missing data, on either variable being cross-classified, such respondents were excluded from the particular analysis.

[b]Includes all respondents who subjectively classified themselves as "hyphenated Canadians" except for "Canadian-Canadian," "English-Canadian," or "British Isles."

[c]In British Columbia, "the lower mainland" is a colloquial expression referring approximately to the Vancouver metropolitan area. "Other" is a shorthand label for rural residents and those who live and work in communities of fewer than 40,000 residents.

[d]Approximately seven percent of this category were non-Christians such as Jews, Hindus, etc. The remainder claimed no religious affiliation or identified themselves as agnostics, atheists, etc.

To wit, respondents were also asked about their perceptions of neighbourhood people and neighbourhood safety. If generic victimization data validly measure perceptions of victimization, it is plausible to expect that those who saw themselves (or members of their households) as victims in the past year would be less likely than other respondents to agree that people who live in their neighbourhood keep out of trouble with the law or that their neighbourhood is very safe compared to others. In fact, when these two items were cross-tabulated with the four variables evaluating whether respondents saw themselves as having been victimized in the past year, all of the results were in the expected direction.

Summary and Conclusions

The results of this pilot study suggest that perceptual data on self-reported generic victimization can be reliably and validly collected

by mail questionnaire if the concern of such research is with obtaining perceptual indicators of individual well-being rather than with obtaining an independent behavioural indicator to assess the accuracy of official statistics.

The use of a small number of generic victimization items also facilitates cross-national comparisons on public perceptions of victimization. In addition, utilization of such items means that such data can be gathered inexpensively and at regular intervals, as a small segment of a larger omnibus survey including additional social indicators. The use of questionnaires also implies the elimination of sources of error attributable to the presence of one or more interviewers and probably reduces error occasioned by a social desirability response set.

At the same time, the use of mail questionnaires has obvious drawbacks. Although a well-designed mail questionnaire with a single follow-up yields an effective response rate similar to a well-executed survey by personal interviews, mail questionnaires limit the utilization of probing questions. However, the necessity of detailed probes is of questionable utility unless data are being collected about official categories of crime.

With mail questionnaires, an assessment of variations in perceived victimization is possible through the collection of socio-demographic data on age, sex, household income, education, marital status, religion, ethnicity, residence, minor children living at home, etc. Such socio-demographic data also make it possible to compare sample statistics with

population distributions obtained from census data. Subsequently, the sample can be weighted, where necessary, to permit generalization to the population.

Nevertheless, a few lessons concerning future victimization surveys were learned from this pilot research. Although the intent of the research was not to assess the accuracy of official statistics, there was a desire to estimate the generic incidence of perceived victimization among British Columbia adults. This was not possible due to two short-comings in the questionnaire.

First, we asked neither for the number of incidents of any generic type of victimization, nor whether such incidents were experienced by the respondent personally or rather by another member of the household. We deliberately decided not to do so because we did not want to discourage the response rate by designing a complicated questionnaire.

With hindsight, this decision must be considered a mistake. There seems to be little doubt that, instead of a simple yes/no response to these four items, we could have used a yes/no alternative with a channel question for "yes" respondents. Such a simple channel question could have asked, "How many times did this happen to you or a member of your household?" and "How many times did this happen to you personally?"

On its own, however, such an extension would not have made generalization possible without also correcting our other shortcoming. Specifically, we should have included an additional socio-demographic question to obtain data on the respondent's relationship to the household head. Together, these additions would have enabled us to calculate

separate victimization scores for household heads, male and female spouses of household heads, children of household heads, other related adults and non-related adults. Subsequently, census data could have been utilized to weight each of these categories to obtain the total (weighted) perceived incidence of victimization among adult British Columbians, based upon first-hand reports of respondents in each of the possible relationships to the head of the household.

Such questions will be included in another survey, planned for next year, in which we hope to further refine a general instrument to obtain perceptual measures of life satisfaction, the provision of social services, police performance, generic victimization, political alienation and additional social indicators.

Footnotes

[1]This research was supported, in part, by the University of Victoria's Committee on Research, Leave and Travel and by the British Columbia Attorney-General's Justice Development Commission. I am grateful to Paula DeBeck and Cassie Doyle for useful editorial suggestions on earlier drafts of this paper.

[2]Additional methodological details pertaining to this survey are available from the author.

References

Andrews, Frank M. Social indicators of perceived life quality. Paper presented at the Eighth Quadrennial World Congress of Sociology, Toronto, August 1974.

Andrews, Frank M. and Stephen B. Withey. Developing measures of perceived life quality: results from several national surveys. Paper presented at meeting of American Sociological Association, New York, August 1973.

Canadian Committee on Corrections. Report of the Canadian Committee on Corrections. Ottawa: Information Canada, 1969.

Courtis, M.C. Attitudes to Crime and The Police in Toronto: A Report on Some Survey Findings. Toronto: Centre of Criminology, 1970.

Douglas, Jack D. American Social Order: Social Rules in A Pluralistic Society. New York: Free Press, 1971.

The Financial Post Survey of Markets and Business Yearbook. 1972, Volume 48.

Giffen, P.J. Rates of Crime and Delinquency, In W.T. McGrath (ed.). Crime and Its Treatment in Canada. Toronto: Macmillan, 1965.

Michalos, Alex C. Crime and Law Enforcement. Paper prepared for the Conference on Social Indicators, Edmonton, May 1975.

President's Committee on Law Enforcement and The Administration of Justice. Task Force Report: The Police. Washington: U.S. Government Printing Office, 1967.

Skogan, Wesley G. The Validity of Official Crime Statistics: An Empirical Investigation. Social Science Quarterly. 1974, 55, 25-38.

Skogan, Wesley G. Measurement Problems in Official and Survey Crime Rates. Journal of Criminal Justice. 1975, 3, 17-32.

U.S. Department of Justice. Crime in Eight American Cities, Advance Report. Washington: U.S. Department of Justice, July, 1974a.

U.S. Department of Justice. Crimes and Victims: A Report on the Dayton-San Jose Pilot Study of Victimization. Washington: U.S. Department of Justice, June,1974b.

Waller, Irwin and Norm Okihiro. Burglary and the public: a victimological approach to criminal justice. Paper presented at meeting of American Society of Criminology, November, 1974.

ADDITIONAL PAPERS SUBMITTED FOR SOCIAL INDICATORS CONFERENCE, 1975

1. Assheton-Smith, Marilyn Dept. of Sociology University of Alberta EDMONTON, Alberta	Social Indicators and Functional Subsystems.
2. Bergner, Marilyn, et al. Project Director School of Public Health and Community Medicine Sickness Impact Profile Project Dept. of Health Services University of Washington SEATTLE, Washington 98195 U. S. A.	Sickness Impact Profile: Concept and Method in the Development of a Health Status Indicator.
3. Czarnocki, B. Dan c/o Trent University PETERBOROUGH, Ontario K9J 7B8	Inductive Periodization, Historical "Mile-Stones", and their Respective Impact on the Psyche; Poland 1950-1971.
4. Davidson, Jill, and Hood, Nancy #1, 5781 Vine Street VANCOUVER, B.C. V6M 4A2	Social Indicators and Social Impact Analysis.
5. Farine , Avigdor Faculte des Sciences de l'Education Universite de Montreal Case Postale 6203 Succursale "A" MONTREAL, Quebec H3C 3T3	L'Atteinte d'Indicateurs Sociaux par la Comptabilite Demographique et Sociale.
6. Ferland, Yvon, Assistant Director Education, Science and Culture Statistics Canada OTTAWA, Ontario K1A OT6	Cultural Indicators.
7. Foster, Robert Director Government Studies Centre Dalhousie University HALIFAX, Nova Scotia	Businessmen's Perception of Quality of Life Factors.

8. Friend, Anthony Advisor on Environmental Indicators Office of the Senior Advisor on Integration 25th Floor, Coats Building Statistics Canada, Tunney's Pasture OTTAWA, Ontario K1A OT6	New Perspectives for Data Development (A discussion paper on an alternate paradigm for describing man's production and consumption activity).
9. Hawrylyshyn, O. Dept. of Economics Queen's University KINGSTON, Ontario K7L 3N6	Evaluating Household Work: Theoretical and Methodological Approaches.
10. Jackson, John J. Division of Physical Education Faculty of Education University of Victoria P.O. Box 1700 VICTORIA, B.C. V8W 2Y2	Diffusion of the Innovation "Sport for All": The Need for a Different Method of Communicating with Lower Occupational Classes.
11. Laing, Lory Dept. of Community Medicine University of Alberta EDMONTON, Alberta	Indicators of Social Change in the Alberta Hutterite Population.
12. Layne, Neville and Ciffin, Shirley Long Range Planning Health and Welfare Canada 251 Bank Street OTTAWA, Ontario	Stigma in Social Security Programs.
13. Leathers, Burton c/o University of Waterloo WATERLOO, Ontario N2L 3G1	Classifying Markov Models.
14. Liu, Ben-chieh Principal Economist Midwest Research Institute 425 Volker Blvd. KANSAS CITY, Missouri 64110 U. S. A.	Economic Growth and Quality of Life: Empirical Results and Policy Implications for Medium SMSA's.
15. Madduri, V.B.N. Sastry Planning Secretariat Dept. of Advanced Education and Manpower Devonian Building 11160 Jasper Avenue EDMONTON, Alberta	Stochastic Indicator of Income Mobility.

16. Magrabi, Francis M.
Family Economics Research Group
U.S. Dept. of Agriculture
Consumer and Food Economics Institute
Federal Building
HYATTSVILLE, Maryland 20782
U. S. A.

An Index of the Economic Welfare of Rural Families.

17. Michalos, Alex
Dept. of Philosophy
University of Guelph
GUELPH, Ontario

Crime and Law Enforcement.

18. Monu, Erasmus D.
Dept. of Sociology
Brandon University
BRANDON, Manitoba
R7A 6A9

Farmers and Farms: A Typology for Analysing Social Consequences of Changes in the Structure of Agriculture.

19. Singh, Harbhajan
Statistics Division
Dept. of Economic Development
Parliament Buildings
VICTORIA, B.C.

A Framework for the Integrated System of Social Statistics.

20. Singh, Harbhajan

On Measuring Social Inequalities.

21. Sismondo, S.
c/o DREE
Social and Human Analysis Branch
161 Laurier Avenue West
OTTAWA, Ontario
K1A OM4

Social Indicators for Policy Research and Democratic Action: A Paradigm and Some Examples.

22. Stafford, Jim
Dept. of Sociology and Anthropology
Lakehead University
THUNDER BAY, Ontario
P7E 5E1

Census Indicators of Urban Development.

23. Swanton, Joan E.
#403-544 Blackthorn N.E,
CALGARY, Alberta

Issues in Criminal Statistics Analysis.

24. Turrittin, A.H.
York University
TORONTO, Ontario

The Need to Study Qualitative Aspects of Social Mobility .

25. Wahn, Michael
Dept. of Sociology
University of Alberta
EDMONTON, Alberta

A Mortality-Hospitalization Indicator of Health.

N.L.C. - B.N.C.
3 3286 06733078 3